NEXRAD Program Management Committee (NPMC)
Guidelines On
External Connections To Near Real-Time WSR-88D Base Data Streams

PURPOSE: This document states the Next Generation Weather Radar (NEXRAD) Program guidelines for connections to Weather Surveillance Radar - 1988 Doppler (WSR-88D) base data streams. These guidelines supplement the NEXRAD configuration management procedures and policies.

1. Background

The NEXRAD Program is a joint effort of the Departments of Commerce (DOC), Defense (DOD), and Transportation (DOT)–the NEXRAD Agencies. The NEXRAD Program has resulted in a network of WSR-88D systems which serve the operational needs of the NEXRAD Agencies.

With the installation of the Open System Radar Product Generators (RPGs), all National Weather Service (NWS) and 8 DOD WSR-88D systems are capable of supporting users (e.g., NEXRAD Agencies, other government agencies, private/commercial sector, universities). This near real-time base data access is via a Base Data Distribution System (BDDS) that is part of the WSR-88D baseline. Each BDDS has four ports and is expandable by at least three ports.

These guidelines supercede the external wideband connection guidelines the NPMC approved in July 2002.

2. Discussion

The NEXRAD Program is in a transition phase for accessing, collecting and distributing base data from WSR-88D systems in near real time. A proof-of-concept project has demonstrated the capability to compress, collect and distribute WSR-88D base data to the National Climatic Data Center (NCDC) and external (e.g., NEXRAD Agencies, other government agencies, private/commercial sector, universities) users in near real time via the Internet, Internet2, DSL, cable modems, and other private communications links.

The NWS has a requirement to collect base data from operational WSR-88Ds for near-real time and archive purposes. The existing, aging base data recorder hardware has the highest failure rate of any line replaceable unit in the radar.

3. Objectives

The objectives of these guidelines are to identify:

a. The conditions, and the application and approval process for near real-time base data access requests in the “interim” period;

b. The planned application and approval process for near real-time base data access after the NEXRAD Agencies have instituted the “final” base data distribution methodology; and

c. How near real-time base data connections are implemented, used, and maintained.

4. Base Data Connections During The Interim Period

Until the final near real-time base data access, collection and distribution methodology is implemented, the NEXRAD Agencies will be in an interim period for near real-time access to base data. The NEXRAD Agencies expect that the end date of the interim period will be announced in 2003. The start date for implementing the final government data distribution architecture will likely be in 2004.

The following connection guidelines will be used during the interim period:

a. Connections To WSR-88D Systems With A BDDS

Connections, including commercial companies and universities, to a BDDS or Remote BDDS will be made with a commercial-vendor T1 connection. The only exceptions to permit a data compression computer in a NEXRAD facility are for NEXRAD Agencies or other government agencies directly supporting the NEXRAD Agencies that require access to base data in near real-time to support operational requirements. The NEXRAD Agencies will determine who to grant permission to install a data compression computer.

Near real-time base data connections inside a NEXRAD Agency facility will require an approved triagency Configuration Change Request and a Memorandum of Agreement (MOA) between the connecting party (e.g., other Government, private/commercial sector, universities) and the owning NEXRAD Agency. The NEXRAD base data distribution focal point will supply these documents and additional connection information upon written request.

When the new methodology is implemented, all non-government connections which includes private companies and universities, shall be informed to move their connections to the new system within 90 days or if more time is needed, a negotiated time period. See section 5.

b. Connections To WSR-88D Systems Without A BDDS

Connections to a WSR-88D site (DOD and DOT) that does not have a BDDS will not be permitted unless:

(1) The owning NEXRAD Agency purchases the BDDS hardware and funds the communications link to the BDDS and approves the external connection; or

(2) Another NEXRAD Agency or other government agency directly supporting the NEXRAD Agencies that requires access to base data in near real-time to support operational requirements reaches an agreement with the owning NEXRAD Agency to purchase the hardware

and fund the communications costs; and

(3) An approved triagency Configuration Change Request, and a Memorandum of Agreement (MOA) between the connecting agency and the owning NEXRAD Agency are completed.

c. Use of Data

There are no restrictions on the use of WSR-88D base data.

d. Restoration Of Base Data Flow

Local technicians will work base data distribution issues on an "as available" basis, except in those cases where the connections are deemed operational by joint written agreement between the owning NEXRAD Agency and the connecting agency. External users are responsible for trouble-shooting and resolving communications problems.

e. Connections To Other Than A WSR-88D

If external users receive WSR-88D base data via the Internet/Internet2 (i.e., without a direct connection to a WSR-88D site), no Configuration Change Request or MOA are required. The Radar Operations Center (ROC) maintains a webpage (http://www.roc.noaa.gov/BDCI/) that contains the terms and conditions of use that all near real-time base data users will follow, along with other relevant information.

f. Insufficient BDDS ports

If all four BDDS ports are already in use when a connection request is received, the following will be done:

(1) The requesting agency will purchase the BDDS-port expansion equipment, using specifications provided by the ROC Engineering Branch.

(2) The requesting agency will permit subsequent approved users to connect to the expansion equipment without charge.

(3) The requesting agency, if still connected, or subsequent requesters connecting to the expansion equipment will pay for and arrange for replacement of the equipment if it fails.

5. Base Data Connections During The Final Period

After the NEXRAD Agencies have implemented the final near real-time base data access, collection, and distribution methodology, the following guidelines will be used:

a. Centralized Collection. The NEXRAD agencies plan to implement a solution that will allow external users near real-time base data from

the Internet/Internet2, or other government-designated connection(s).

b. Direct Connection. Near real-time base data access via connections to individual WSR-88D systems (BDDS or Remote BDDS) will be available only to NEXRAD Agencies or other government agencies directly supporting a NEXRAD Agency that cannot be supported through centralized collection. The NEXRAD agencies will make this determination.

c. If external users receive WSR-88D base data via the Internet/ Internet2 (i.e., without a direct connection to a WSR-88D site), no Configuration Change Request or MOA are required. The ROC maintains a webpage (http://www.roc.noaa.gov/BDCI/) that contains the terms and conditions of use that all near real-time base data users will follow, along with other relevant information.

6. WSR-88D Near Real-Time Base Collection And Point Of Contact

Contact the Director, Radar Operations Center, 405-366-6503, for the contact information for the WSR-88D base data collection and distribution focal point.

7. Effective Date, Modification, And Termination

These guidelines shall become effective on the date of the last approval signature appearing herein.

The NPMC will review these guidelines at least annually to determine whether the guidelines should be revised, renewed, or cancelled. Additional reviews will be conducted as directed by the NPMC. The NPMC may amend these guidelines at any time.